

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Douglas J. Jolly et al.

Serial No.: to be assigned Group Art Unit: to be assigned

Filed: December 30, 1997 Examiner: to be assigned

For: METHODS FOR ADMINISTRATION OF RECOMBINANT GENE
DELIVERY VEHICLES FOR TREATMENT OF HEMOPHILIA AND
OTHER DISORDERS

DECLARATION UNDER 37 CFR §1.821(f)

Assistant Commissioner for Patents
Washington, D.C. 20231

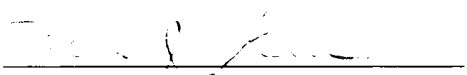
Sir:

I hereby state that the content of the paper and computer readable copies of the Sequence Listing, submitted in accordance with 37 C.F.R. §1.821(c) and (e), respectively, are the same.

I hereby declare that all statements made herein of my own knowledge are true, that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both (18 USC 1001), and may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,

By:


Norman J. Kruse, Ph.D.
Attorney for Applicants
Reg. No. 35,235

December 30, 1997

CHIRON CORPORATION
Intellectual Property - R440
P.O. Box 8097
Emeryville, California 94662-8097
(510) 923-3520
(510) 655-3542 (fax)

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/001,039

DATE: 02/10/98
TIME: 11:36:45

INPUT SET: S23358.raw

This Raw Listing contains the General
Information Section and those Sequences
containing ERRORS.

SEQUENCE LISTING

Does Not Comply
Corrected Diskette Needed

(1) General Information:

(i) APPLICANT: Chiron Corporation

(ii) TITLE OF INVENTION: Methods for Administration of
Recombinant Gene Delivery Vehicles for Treatment of Hemophilia and Other Dis

(iii) NUMBER OF SEQUENCES: (83) 46 shown (p. 16)

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Chiron Corporation

(B) STREET: 4560 Horton Street

(C) CITY: Emeryville

(D) STATE: California

(E) COUNTRY: U.S.A.

(F) ZIP: 94608

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk

(B) COMPUTER: IBM PC compatible

(C) OPERATING SYSTEM: PC-DOS/MS-DOS

(D) SOFTWARE: PatentIn Release #1.0, Version #1.30

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER:

(B) FILING DATE:

(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Kruse, Norman J.

(B) REGISTRATION NUMBER: 35,235

(C) REFERENCE/DOCKET NUMBER: 1155.005

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: (510) 923-3520

(B) TELEFAX: (510) 655-3542

↑
insert last
return - All
text must
be visible on
page

Please Note:

The file was
not saved in
ASCII (DOS) text,
required by
Sequence Rules;
please ensure
correct disk file
is saved in ASCII
text, or the PTO
will not process it.

ERRORED SEQUENCES FOLLOW:

RAW SEQUENCE LISTING PATENT APPLICATION US/09/001,039

DATE: 02/10/98
TIME: 11:36:47

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103 (2) INFORMATION FOR SEQ ID NO:7:
104 (i) SEQUENCE CHARACTERISTICS:
--> 105 (A) LENGTH: 77 base pairs
106 (B) TYPE: nucleic acid
107 (C) STRANDEDNESS: single
108 (D) TOPOLOGY: linear
109 (ii) MOLECULE TYPE: DNA (genomic)
110 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:
111 AGTGAATTTCG AGCTCGGTAC CCGGGGATCC TCTAGAGTCG ACCTGCAGGC
--> 112 ATGCAAGCTT 60
113 GCGGTAATCA TGGTCAT
114

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format error

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77

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188 (2) INFORMATION FOR SEQ ID NO:15:
189 (i) SEQUENCE CHARACTERISTICS:
--> 190 (A) LENGTH: 8332 base pairs
191 (B) TYPE: nucleic acid
192 (C) STRANDEDNESS: single
193 (D) TOPOLOGY: linear
194 (ii) MOLECULE TYPE: DNA (genomic)
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--> 198 AACCCTCTTG 60
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--> 213 GCAACCCTGG 360
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--> 219 CTGGTAGGAG 480
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--> 222 TGGGACCGAA 540
223
224 GCGCGCCCGC GCGTCTTGTC TGCTGCAGCA TCGTCTGTG TTGTCTCTGT
--> 225 CTGACTGTGT 600
226
227 TTCTGTATTT GTCTGAGAAT ATGGGCCAGA CTGTTACCAC TCCCTTAAGT

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Same

✓

Explanation of error that occurred throughout the Sequence Listing:

For all of your nucleic sequences, the nucleic number at the end of each line "wrapped" down to the next line. This occurred if your file was retrieved in a word processor after creating it in PatentIn. Your word processor probably has different margin settings than those used in PatentIn. (A right margin set at least to .3 in your word processor will prevent wrapping)

RAW SEQUENCE LISTING
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TIME: 11:36:49

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--> 231 AAGAAGAGAC 720
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--> 234 CCGCGAGACG 780
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236 GCACCTTTAA CCGAGACCTC ATCACCAGG TTAAGATCAA GGTCTTTTCA
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239 ATGGACACCC AGACCAGGTC CCCTACATCG TGACCTGGGA AGCCTTGGCT
--> 240 TTTGACCCCC 900
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242 CTCCCTGGGT CAAGCCCTTT GTACACCCTA AGCCTCCGCC TCCTCTTCCT
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248 TCACTCCTTC TCTAGGCGCC AAACCTAAAC CTCAAGTTCT TTCTGACAGT
--> 249 GGGGGGCGC 1080
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251 TCATCGACCT ACTTACAGAA GACCCCCCGC CTTATAGGGA CCCAAGACCA
--> 252 CCCCCTTCCG 1140
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254 ACAGGGACGG AAATGGTGGA GAAGCGACCC CTGCGGGAGA GGCACCGGAC
--> 255 CCCTCCCCAA 1200
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257 TGGCATCTCG CCTACGTGGG AGACGGGAGC CCCCTGTGGC CGACTCCACT
--> 258 ACCTCGCAGG 1260
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260 CATTCCCCCT CCGCGCAGGA GGAAACGGAC AGCTTCAATA CTGGCCGTTC
--> 261 TCCTCTTCTG 1320
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263 ACCTTTACAA CTGGAAAAAT AATAACCCTT CTTTTTCTGA AGATCCAGGT
--> 264 AAACCTGACAG 1380
265
266 CTCTGATCGA GTCTGTTCTC ATCACCATC AGCCACCTG GGACGACTGT
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269 TGGGGACTCT GCTGACCGGA GAAGAAAAAC AACGGGTGCT CTTAGAGGCT
--> 270 AGAAAGGCGG 1500
271
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--> 273 GCTTTTCCCC 1560
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275 TCGAGCGCCC AGACTGGGAT TACACCACCC AGGCAGGTAG GAACCACCTA
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278 GCCAGTTGCT CCTAGCGGGT CTCCAAAACG CGGGCAGAAG CCCCACCAAT
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TIME: 11:36:52

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--> 285 ACTAATGTGT 1800
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287 CTATGTCTTT CATTTGGCAG TCTGCCCCAG ACATTGGGAG AAAGTTAGAG
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290 ATTTAAAAAA CAAGACGCTT GGAGATTTGG TTAGAGAGGC AGAAAAGATC
--> 291 TTTAATAAAC 1920
292
293 GAGAAACCCC GGAAGAAAGA GAGGAACGTA TCAGGAGAGA AACAGAGGAA
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296 GCCGTAGGAC AGAGGATGAG CAGAAAGAGA AAGAAAGAGA TCGTAGGAGA
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299 TGAGCAAGCT ATTGGCCACT GTCGTTAGTG GACAGAAACA GGATAGACAG
--> 300 GGAGGAGAAC 2100
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302 GAAGGAGGTC CCAACTCGAT CGCGACCAGT GTGCCTACTG CAAAGAAAAG
--> 303 GGGCACTGGG 2160
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305 CTAAAGATTG TCCCAAGAAA CCACGAGGAC CTCGGGGACC AAGACCCCAG
--> 306 ACCTCCCTCC 2220
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308 TGACCCTAGA TGA CTAGGGA GGT CAGGGTC AGGAGCCCCC CCCTGAACCC
--> 309 AGGATAACCC 2280
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311 TCAAAGTCGG GGGGCAACCC GTCACCTTCC TGGTAGATAC TGGGGCCCCAA
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314 TGACCCAAAA TCCTGGACCC CTAAGTGATA AGTCTGCCTG GGTCCAAGGG
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317 GAAAGCGGTA TCGCTGGACC ACGGATCGCA AAGTACATCT AGCTACCGGT
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320 ACTCTTTCCT CCATGTACCA GACTGTCCCT ATCCTCTGTT AGGAAGAGAT
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323 AACTAAAAGC CCAAATCCAC TTTGAGGGAT CAGGAGCTCA GGTATGGGA
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326 AGCCCCTGCA AGTGTGACC CTAAATATAG AAGATGAGCA TCGGCTACAT
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329 AAGAGCCAGA TGTTTCTCTA GGTCCACAT GGCTGTCTGA TTTTCTCAG
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332 AAACCGGGGG CATGGGACTG GCAGTTCGCC AAGCTCCTCT GATCATACCT
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TIME: 11:36:54

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--> 339 TCCCCCTGGA 2880
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341 ACACGCCCCCT GCTACCCGTT AAGAAACCAG GGACTAATGA TTATAGGCCT
--> 342 GTCCAGGATC 2940
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344 TGAGAGAAGT CAACAAGCGG GTGGAAGACA TCCACCCAC CGTGCCCAAC
--> 345 CTTTACAACC 3000
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347 TCTTGAGCGG GCTCCCACCG TCCCACCAGT GGTACACTGT GCTTGATTTA
--> 348 AAGGATGCCT 3060
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350 TTTTCTGCCT GAGACTCCAC CCCACCAGTC AGCCTCTCTT CGCCTTTGAG
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371 AGACCCCTCG ACAACTAAGG GAGTTCCTAG GGACGGCAGG CTTCTGTGCG
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374 CTGGGTTTGC AGAAATGGCA GCCCCCTTGT ACCCTCTCAC CAAAACGGGG
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377 ATTGGGGCCC AGACCAACAA AAGGCCTATC AAGAAATCAA GCAAGCTCTT
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380 CAGCCCTGGG GTTGCCAGAT TTGACTAAGC CCTTTGAACT CTTTGTGCGC
--> 381 GAGAAGCAGG 3720
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383 GCTACGCCAA AGGTGTCTTA ACGCAAAAAC TGGGACCTTG GCGTCGGCCG
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386 TGTCCAAAAA GCTAGACCCA GTAGCAGCTG GGTGGCCCCC TTGCCTACGG

Done

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407 AGGCGGGAGC TGCGGTGACC ACCGAGACCG AGGTAATCTG GGCTAAAGCC
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416 GAGAAATATA CAGAAGGCGT GGGTTGCTCA CATCAGAAGG CAAAGAGATC
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419 ACGAGATCTT GGCCCTACTA AAAGCCCTCT TTCTGCCCAA AAGACTTAGC
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422 GTCCAGGACA TCAAAAGGGA CACAGCGCCG AGGCTAGAGG CAACCGGATG
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425 CGGCCCCGAAA GGCAGCCATC ACAGAGACTC CAGACACCTC TACCCTCCTC
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431 AGTTGGGGGC CATTTATGAT AAAACAAAGA AGTATTGGGT CTACCAAGGA
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RAW SEQUENCE LISTING
PATENT APPLICATION US/09/001,039DATE: 02/10/98
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446 TCGATTTCAC CGAGATAAAG CCCGGATTGT ATGGCTATAA ATATCTTCTA
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605 ACCCTGTGCC TTATTTGAAC TAACCAATCA GTTCGCTTCT CGCTTCTGTT
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612 8332
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714 (2) INFORMATION FOR SEQ ID NO:26:
715 (i) SEQUENCE CHARACTERISTICS:
--> 716 (A) LENGTH: 51 base pairs
717 (B) TYPE: nucleic acid
718 (C) STRANDEDNESS: single
719 (D) TOPOLOGY: linear
720 (ii) MOLECULE TYPE: DNA (genomic)
721 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:
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731 (D) TOPOLOGY: linear
732 (ii) MOLECULE TYPE: DNA (genomic)
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906 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:
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PATENT APPLICATION US/09/001,039DATE: 02/10/98
TIME: 11:37:09

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--> 911 CTAAAGATAT TTTAGAGAAG AATTAACCTT TTGCTTCTCC AGTTGAACAT
--> 912 TTGTAGCAAT 180
913 AAGTCATGCA AATAGAGCTC TCCACCTGCT TCTTTCTGTG CCTTTTGCGA
--> 914 TTCTGCCTTA 240
915 GTGCCACCAG AAGATACTAC CTGGGTGCAG TGGAAGTGTG ATGGGACTAT
--> 916 ATGCAAAGTG 300
917 ATCTCGGTGA GCTGCCTGTG GACGCAAGAT TTCCTCCTAG AGTGCCAAAA
--> 918 TCTTTTCCAT 360
919 TCAACACCTC AGTCGTGTAC AAAAAGACTC TGTTTGTAGA ATTCACGGAT
--> 920 CACCTTTTCA 420
921 ACATCGCTAA GCCAAGGCCA CCCTGGATGG GTCTGCTAGG TCCTACCATC
--> 922 CAGGCTGAGG 480
923 TTTATGATAC AGTGGTCATT ACACCTAAGA ACATGGCTTC CCATCCTGTC
--> 924 AGTCTTCATG 540
925 CTGTTGGTGT ATCCTACTGG AAAGCTTCTG AGGGAGCTGA ATATGATGAT
--> 926 CAGACCAGTC 600
927 AAAGGGAGAA AGAAGATGAT AAAGTCTTCC CTGGTGGAAG CCATACATAT
--> 928 GTCTGGCAGG 660
929 TCCTGAAAGA GAATGGTCCA ATGGCCTCTG ACCCACTGTG CCTTACCTAC
--> 930 TCATATCTTT 720
931 CTCATGTGGA CCTGGTAAAA GACTTGAATT CAGGCCTCAT TGGAGCCCTA
--> 932 CTAGTATGTA 780
933 GAGAAGGGAG TCTGGCCAAG GAAAAGACAC AGACCTTGCA CAAATTTATA
--> 934 CTACTTTTTG 840
935 CTGTATTTGA TGAAGGGAAA AGTTGGCACT CAGAAACAAA GAACTCCTTG
--> 936 ATGCAGGATA 900
937 GGGATGCTGC ATCTGCTCGG GCCTGGCCTA AAATGCACAC AGTCAATGGT
--> 938 TATGTAAACA 960
939 GGTCTCTGCC AGGTCCTGAT GGATGCCACA GGAAATCAGT CTATTGGCAT
--> 940 GTGATTGGAA 1020
941 TGGGCACCAC TCCTGAAAGT CACTCAATAT TCCTCGAAGG TCACACATTT
--> 942 CTTGTGAGGA 1080
943 ACCATCGCCA GCGTCCTTG GAAATCTCGC CAATAACTTT CTTACTGCT
--> 944 CAAACACTCT 1140
945 TGATGGACCT TGGACAGTTT CTAATGTTTT GTCATATCTC TTCCACCAA
--> 946 CATGATGGCA 1200
947 TGGAAGCTTA TGTCAAAGTA GACAGCTGTC CAGAGGAACC CCAACTACGA
--> 948 ATGAAAAATA 1260
949 ATGAAGAAGC GGAAGACTAT GATGATGATC TTAATGATTC TGAAATGGAT
--> 950 GTGGTCAGGT 1320
951 TTGATGATGA CAACTCTCCT TCCTTTATCC AAATTCGCTC AGTTGCCAAG
--> 952 AAGCATCCTA 1380
953 AAACCTGGGT ACATTACATT GCTGCTGAAG AGGAGGACTG GGAATATGCT
--> 954 CCCTTAGTCC 1440
955 TCGCCCCCGA TGACAGAAGT TATAAAAGTC AATATTTGAA CAATGGCCCT
--> 956 CAGCGGATTG 1500
957 GTAGGAAGTA CAAAAAGTC CGATTTATGG CATAACAGA TGAAACCTTT
--> 958 AAGACTCGTG 1560
959 AAGCTATTCA GCATGAATCA GGAATCTTGG GACCTTTACT TTATGGGGAA
--> 960 GTTGGAGACA 1620
961 CACTGTTGAT TATATTTAAG AATCAAGCAA GCAGACCATA TAACATCTAC
--> 962 CCTCACGGAA 1680
963 TCATGATGT CCGTCCTTTG TATTCAAGGA GATTACCAAA AGGTGTAAAA

Adm

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/001,039DATE: 02/10/98
TIME: 11:37:12

INPUT SET: S23358.raw

--> 964 CATTGAAGG 1740
965 ATTTTCCAAT TCTGCCAGGA GAAATATTCA AATATAAATG GACAGTGACT
--> 966 GTAGAAGATG 1800
967 GGCCAACATA ATCAGATCCT CGGTGCCTGA CCCGCTATTA CTCTAGTTTC
--> 968 GTTAATATGG 1860
969 AGAGAGATCT AGCTTCAGGA CTCATTGGCC CTCTCCTCAT CTGCTACAAA
--> 970 GAATCTGTAG 1920
971 ATCAAAGAGG AAACCAGATA ATGTCAGACA AGAGGAATGT CATCCTGTTT
--> 972 TCTGTATTTG 1980
973 ATGAGAACCG AAGCTGGTAC CTCACAGAGA ATATACAACG CTTTCTCCCC
--> 974 AATCCAGCTG 2040
975 GAGTGCAGCT TGAGGATCCA GAGTTCCAAG CCTCCAACAT CATGCACAGC
--> 976 ATCAATGGCT 2100
977 ATGTTTTTGA TAGTTTGCGAG TTGTCAGTTT GTTGCATGA GGTGGCATAC
--> 978 TGGTACATTC 2160
979 TAAGCATTTG AGCACAGACT GACTTCCTTT CTGTCTTCTT CTCTGGATAT
--> 980 ACCTTCAAAC 2220
981 ACAAATGGT CTATGAAGAC AACTCACCC TATTTCCATT CTCAGGAGAA
--> 982 ACTGTCTTCA 2280
983 TGTCGATGGA AAACCCAGGT CTATGGATTC TGGGGTGCCA CAACTCAGAC
--> 984 TTTCGGAACA 2340
985 GAGGCATGAC CGCCTTACTG AAGGTTTCTA GTTGTGACAA GAACACTGGT
--> 986 GATTATTACG 2400
987 AGGACAGTTA TGAAGATATT TCAGCATACT TGCTGAGTAA AAACAATGCC
--> 988 ATTGAACCAA 2460
989 GAAGCTTCTC CCAGAATTCA AGACACCCTA GCACTAGGCA AAAGCAATTT
--> 990 AATGCCACCA 2520
991 CAATTCCAGA AAATGACATA GAGAAGACTG ACCCTTGGTT TGCACACAGA
--> 992 ACACCTATGC 2580
993 CTAAAATACA AAATGTCTCC TCTAGTGATT TGTTGATGCT CTTGCGACAG
--> 994 AGTCCTACTC 2640
995 CACATGGGCT ATCCTTATCT GATCTCCAAG AAGCCAAATA TGAGACTTTT
--> 996 TCTGATGATC 2700
997 CATCACCTGG AGCAATAGAC AGTAATAACA GCCTGTCTGA AATGACACAC
--> 998 TTCAGGCCAC 2760
999 AGCTCCATCA CAGTGGGGAC ATGGTATTTA CCCCTGAGTC AGGCCTCCAA
--> 1000 TTAAGATTAA 2820
1001 ATGAGAAACT GGGGACAACT GCAGCAACAG AGTTGAAGAA ACTTGATTTC
--> 1002 AAAGTTTCTA 2880
1003 GTACATCAAA TAATCTGATT TCAACAATTC CATCAGACAA TTTGGCAGCA
--> 1004 GGTACTGATA 2940
1005 ATACAAGTTC CTTAGGACCC CCAAGTATGC CAGTTCATTA TGATAGTCAA
--> 1006 TTAGATACCA 3000
1007 CTCTATTTGG CAAAAAGTCA TCTCCCCTTA CTGAGTCTGG TGGACCTCTG
--> 1008 AGCTTGAGTG 3060
1009 AAGAAAATAA TGATTCAAAG TTGTTAGAAT CAGGTTTAAAT GAATAGCCAA
--> 1010 GAAAGTTCAT 3120
1011 GGGGAAAAAA TGTATCGTCA ACAGAGAGTG GTAGGTTATT TAAAGGGAAA
--> 1012 AGAGCTCATG 3180
1013 GACCTGCTTT GTTGACTAAA GATAATGCCT TATTCAAAGT TAGCATCTCT
--> 1014 TTGTTAAAGA 3240
1015 CAAACAAAAC TTCCAATAAT TCAGCAACTA ATAGAAAGAC TCACATTGAT
--> 1016 GGCCCATCAT 3300

Done

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/001,039DATE: 02/10/98
TIME: 11:37:15

INPUT SET: S23358.raw

1017 TATTAATTGA GAATAGTCCA TCAGTCTGGC AAAATATATT AGAAAGTGAC
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1019 AAAAAGTGAC ACCTTTGATT CATGACAGAA TGCTTATGGA CAAAAATGCT
--> 1020 ACAGCTTTGA 3420
1021 GGCTAAATCA TATGTCAAAT AAAACTACTT CATCAAAAAA CATGGAAATG
--> 1022 GTCCAACAGA 3480
1023 AAAAAGAGGG CCCCATTCCA CCAGATGCAC AAAATCCAGA TATGTCGTTC
--> 1024 TTTAAGATGC 3540
1025 TATTCTTGCC AGAATCAGCA AGGTGGATAC AAAGGACTCA TGGAAAGAAC
--> 1026 TCTCTGAAC 3600
1027 CTGGGCAAGG CCCCAGTCCA AAGCAATTAG TATCCTTAGG ACCAGAAAAA
--> 1028 TCTGTGGAAG 3660
1029 GTCAGAATTT CTTGTCTGAG AAAACAAAAG TGGTAGTAGG AAAGGGTGAA
--> 1030 TTTACAAAGG 3720
1031 ACGTAGGACT CAAAGAGATG GTTTTTCCTA GCAGCAGAAA CCTATTTCTT
--> 1032 ACTAACTTGG 3780
1033 ATAATTTACA TGAAAAATAAT ACACACAATC AAGAAAAAAA AATTCAGGAA
--> 1034 GAAATAGAAA 3840
1035 AGAAGGAAAC ATTAATCCAA GAGAATGTAG TTTTGCCTCA GATACATACA
--> 1036 GTGACTGGCA 3900
1037 CTAAGAATTT CATGAAGAAC CTTTCTTAC TGAGCACTAG GCAAAATGTA
--> 1038 GAAGGTTTCA 3960
1039 ATGACGGGGC ATATGCTCCA GTACTTCAAG ATTTTAGGTC ATTAATGAT
--> 1040 TCAACAAATA 4020
1041 GAACAAAGAA ACACACAGCT CATTCTCAA AAAAAAGGGA GGAAGAAAAAC
--> 1042 TTGGAAGGCT 4080
1043 TGGGAAATCA AACCAAGCAA ATGTAGAGA AATATGCATG CACCACAAGG
--> 1044 ATATCTCCTA 4140
1045 ATACAAGCCA GCAGAATTTT GTCACGCAAC GTAGTAAGAG AGCTTTGAAA
--> 1046 CAATTCAGAC 4200
1047 TCCCCTAGA AGAAACAGAA CTTGAAAAAA GGATAATTGT GGATGACACC
--> 1048 TCAACCCAGT 4260
1049 GGTCCAAAAA CATGAAACAT TTGACCCCGA GCACCCTCAC ACAGATAGAC
--> 1050 TACAATGAGA 4320
1051 AGGAGAAAGG GGCCATTACT CAGTCTCCCT TATCAGATTG CCTTACGAGG
--> 1052 AGTCATAGCA 4380
1053 TCCCTCAAGC AAATAGATCT CCATTACCCA TTGCAAAGGT ATCATCATTT
--> 1054 CCATCTATTA 4440
1055 GACCTATATA TCTGACCAGG GTCCTATTCC AAGACAACCT TTCTCATCTT
--> 1056 CCAGCAGCAT 4500
1057 CTTATAGAAA GAAAGATTCT GGGGTCCAAG AAAGCAGTCA TTTCTTACAA
--> 1058 GGAGCCAAAA 4560
1059 AAAATAACCT TTCTTTAGCC ATTCTAACCT TGGAGATGAC TGGTGATCAA
--> 1060 AGAGAGGTTG 4620
1061 GCTCCCTGGG GACAAGTGCC ACAAATTCAG TCACATACAA GAAAGTTGAG
--> 1062 AACACTGTTC 4680
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--> 1064 AAAGTTCACA 4740
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--> 1066 CATCTGGATC 4800
1067 TCGTGGAAGG GAGCCTTCTT CAGGGAACAG AGGGAGCGAT TAAGTGGAAT
--> 1068 GAAGCAAACA 4860
1069 GACCTGGAAA AGTTCCTTT CTGAGAGTAG CAACAGAAAG CTCTGCAAAG

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PATENT APPLICATION US/09/001,039DATE: 02/10/98
TIME: 11:37:17

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--> 1070 ACTCCCTCCA 4920
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--> 1074 ACCATTTTGT 5040
1075 CCCTGAACGC TTGTGAAAGC AATCATGCAA TAGCAGCAAT AAATGAGGGA
--> 1076 CAAAAAAGC 5100
1077 CCGAAATAGA AGTCACCTGG GCAAAGCAAG GTAGGACTGA AAGGCTGTGC
--> 1078 TCTCAAAACC 5160
1079 CACCAGTCTT GAAACGCCAT CAACGGGAAA TAACTCGTAC TACTCTTCAG
--> 1080 TCAGATCAAG 5220
1081 AGGAAATTGA CTATGATGAT ACCATATCAG TTGAAATGAA GAAGGAAGAT
--> 1082 TTTGACATTT 5280
1083 ATGATGAGGA TGAAATCAG AGCCCCCGCA GCTTTCAAAA GAAAACACGA
--> 1084 CACTATTTTA 5340
1085 TTGCTGCAGT GGAGAGGCTC TGGGATTATG GGATGAGTAG CTCCCCACAT
--> 1086 GTTCTAAGAA 5400
1087 ACAGGGCTCA GAGTGGCAGT GTCCCTCAGT TCAAGAAAGT TGTTTTCCAG
--> 1088 GAATTTACTG 5460
1089 ATGGCTCCTT TACTCAGCCC TTATACCGTG GAGAACTAAA TGAACATTTG
--> 1090 GGACTCCTGG 5520
1091 GGCCATATAT AAGAGCAAGAA GTTGAAGATA ATATCATGGT AACTTTCAGA
--> 1092 AATCAGGCCT 5580
1093 CTCGTCCTTA TTCCTTCTAT TCTAGCCTTA TTTCTTATGA GGAAGATCAG
--> 1094 AGGCAAGGAG 5640
1095 CAGAACCTAG AAAAAACTTT GTCAAGCCTA ATGAAACCAA AACTTACTTT
--> 1096 TGGAAAGTGC 5700
1097 AACATCATAT GGCACCCACT AAAGATGAGT TTGACTGCAA AGCCTGGGCT
--> 1098 TATTTCTCTG 5760
1099 ATGTTGACCT GGAAAAAGAT GTGCACTCAG GCCTGATTGG ACCCCTTCTG
--> 1100 GTCTGCCACA 5820
1101 CTAACACACT GAACCCTGCT CATGGGAGAC AAGTGACAGT ACAGGAATTT
--> 1102 GCTCTGTTTT 5880
1103 TCACCATCTT TGATGAGACC AAAAGCTGGT ACTTCACTGA AAATATGGAA
--> 1104 AGAAACTGCA 5940
1105 GGGCTCCCTG CAATATCCAG ATGGAAGATC CCACTTTTAA AGAGAATTAT
--> 1106 CGCTTCCATG 6000
1107 CAATCAATGG CTACATAATG GATACACTAC CTGGCTTAGT AATGGCTCAG
--> 1108 GATCAAAGGA 6060
1109 TTCGATGGTA TCTGCTCAGC ATGGGCAGCA ATGAAAACAT CCATTCTATT
--> 1110 CATTTTCAGT 6120
1111 GACATGTGTT CACTGTACGA AAAAAAGAGG AGTATAAAAT GGCCTGTAC
--> 1112 AATCTCTATC 6180
1113 CAGGTGTTTT TGAGACAGTG GAAATGTTAC CATCCAAAGC TGAATTTTGG
--> 1114 CGGGTGAAT 6240
1115 GCCTTATTGG CGAGCATCTA CATGCTGGGA TGAGCACACT TTTTCTGGTG
--> 1116 TACAGCAATA 6300
1117 AGTGTACAGC TCCCCTGGGA ATGGCTTCTG GACACATTAG AGATTTTCAG
--> 1118 ATTACAGCTT 6360
1119 CAGGACAATA TGGACAGTGG GCCCCAAAGC TGGCCAGACT TCATTATTCC
--> 1120 GGATCAATCA 6420
1121 ATGCCTGGAG CACCAAGGAG CCCTTTTCTT GGATCAAGGT GGATCTGTTG
--> 1122 GCACCAATGA 6480

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TIME: 11:37:20

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--> 1124 TACATCTCTC 6540
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--> 1126 GGAAATTCCA 6600
1127 CTGGAACCTT AATGGTCTTC TTTGGCAATG TGGATTCATC TGGGATAAAA
--> 1128 CACAATATTT 6660
1129 TTAACCCTCC AATTATTGCT CGATACATCC GTTTGCACCC AACTCATTAT
--> 1130 AGCATTGCGA 6720
1131 GCACTCTTCG CATGGAGTTG ATGGGCTGTG ATTTAAATAG TTGCAGCATG
--> 1132 CCATTGGGAA 6780
1133 TGGAGAGTAA AGCAATATCA GATGCACAGA TTA CTGCTTC ATCCTACTTT
--> 1134 ACCAATATGT 6840
1135 TTGCCACCTG GTCTCCTTCA AAAGCTCGAC TTCACCTCCA AGGGAGGAGT
--> 1136 AATGCCCTGGA 6900
1137 GACCTCAGGT GAATAATCCA AAAGAGTGGC TGCAAGTGGG CTTC CAGAAG
--> 1138 ACAATGAAAG 6960
1139 TCACAGGAGT AACTACTCAG GGAGTAAAAT CTCTGCTTAC CAGCATGTAT
--> 1140 GTGAAGGAGT 7020
1141 TCCTCATCTC CAGCAGTCAA GATGGCCATC AGTGGACTCT CTTTTTTCAG
--> 1142 AATGGCAAAG 7080
1143 TAAAGGTTTT TCAGGGAAAT CAAGACTCCT TCACACCTGT GGTGAACTCT
--> 1144 CTAGACCCAC 7140
1145 CGTTACTGAC TCGCTACCTT CGAATTCACC CCCAGAGTTG GGTGCACCAG
--> 1146 ATTGCCCTGA 7200
1147 GGATGGAGGT TCTGGGCTGC GAGGCACAGG ACCTCTACTG AGGGTGGCCA
--> 1148 CTGCAGCACC 7260
1149 TGCCACTGCC GTCACCTCTC CCTCCTCAGC TCCAGGGCAG TGTCCCTCCC
--> 1150 TGGCTTGCCCT 7320
1151 TCTACCTTTG TGCTAAATCC TAGCAGACAC TGCCTTGAAG CCTCCTGAAT
--> 1152 TAACTATCAT 7380
1153 CAGTCCTGCA TTTCTTTGGT GGGGGGCCAG GAGGGTGCAT CCAATTTAAC
--> 1154 TTA ACTCTTA 7440
1155 CCTATTTTCT GCAGCTGCTC CCAGATTACT CCTTCCTTCC AATATAACTA
--> 1156 GGCAAAAAGA 7500
1157 AGTGAGGAGA AACCTGCATG AAAGCATTCT TCCCTGAAAA GTTAGGCCTC
--> 1158 TCAGAGTCAC 7560
1159 CACTTCCTCT GTTGTAGAAA AACTATGTGA TGAAACTTTG AAAAAAGATAT
--> 1160 TTATGATGTT 7620
1161 AACATTTTCAG GTTAAGCCTC ATACGTTTAA AATAAACTC TCAGTTGTTT
--> 1162 ATTATCCTGA 7680
1163 TCAAGCATGG AACAAAGCAT GTTTCAGGAT CAGATCAATA CAATCTTGGA
--> 1164 GTCAAAAGGC 7740
1165 AAATCATTTG GACAATCTGC AAAATGGAGA GAATACAATA ACTACTACAG
--> 1166 TAAAGTCTGT 7800
1167 TTCTGCTTCC TTACACATAG ATATAATTAT GTTATTTAGT CATTATGAGG
--> 1168 GGCACATTCT 7860
1169 TATCTCCAAA ACTAGCATTC TTAACTGAG AATTATAGAT GGGGTTCAAG
--> 1170 AATCCCTAAG 7920
1171 TCCCCTGAAA TTATATAAGG CATTCTGTAT AAATGCAAAT GTGCATTTTT
--> 1172 CTGACGAGTG 7980
1173 TCCATAGATA TAAAGCCATT TGGTCTTAAT TCTGACCAAT AAAAAAATAA
--> 1174 GTCAGGAGGA 8040
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RAW SEQUENCE LISTING PATENT APPLICATION US/09/001,039

DATE: 02/10/98
TIME: 11:37:23

INPUT SET: S23358.raw

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--> 1176 GTGATGGCCA      8100
1177 AGAAAGAAAA TGATGATGAC ATTAGGCTTC TAAAGGACAT ACATTTAATA
--> 1178 TTTCTGTGGA      8160
1179 AATATGAGGA AAATCCATGG TTATCTGAGA TAGGAGATAC AAACTTTGTA
--> 1180 ATTCTAATAA      8220
1181 TGCACTCAGT TTACTCTCTC CCTCTACTAA TTTCTGCTG AAAATAACAC
--> 1182 AACAAAAATG      8280
1183 TAACAGGGGA AATTATATAC CGTGACTGAA AACTAGAGTC CTACTTACAT
--> 1184 AGTTGAAATA      8340
1185 TCAAGGAGGT CAGAAGAAAA TTGGACTGGT GAAAACAGAA AAAACACTCC
--> 1186 AGTCTGCCAT      8400
1187 ATCACCACAC AATAGGATCC CCCTTCTTGC CCTCCACCCC CATAAGATTG
--> 1188 TGAAGGGTTT      8460
1189 ACTGCTCCTT CCATCTGCCT GACCCCTTCA CTATGACTAC ACAGAATCTC
--> 1190 CTGATAGTAA      8520
1191 AGGGGGCTGG AGGCAAGGAT AAGTTATAGA GCAGTTGGAG GAAGCATCCA
--> 1192 AAGATTGCAA      8580
1193 CCCAGGGCAA ATGGAAAACA GGAGATCCTA ATATGAAAGA AAAATGGATC
--> 1194 CCAATCTGAG      8640
1195 AAAAGGCAAA AGAATGGCTA CTTTTTTCTA TGCTGGAGTA TTTTCTAATA
--> 1196 ATCCTGCTTG      8700
1197 ACCCTTATCT GACCTCTTTG GAACTATAA CATAGCTGTC ACAGTATAGT
--> 1198 CACAATCCAC      8760
1199 AAATGATGCA GGTGCAAATG GTTTATAGCC CTGTGAAGTT CTTAAAGTTT
--> 1200 AGAGGCTAAC      8820
1201 TTACAGAAAT GAATAAGTTG TTTTGTTTTA TAGCCCGGTA GAGGAGTTAA
--> 1202 CCCCAAAGGT      8880
1203 GATATGGTTT TATTTCTGTG TATGTTTAAC TTAATAATCT TATTTTGGCA
--> 1204 TTCTTTTCCC      8940
1205 ATTGACTATA TACATCTCTA TTTCTCAAAT GTTCATGGAA CTAGCTCTTT
--> 1206 TATTTTCTTG      9000
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--> 1208 AAAAAAAAAA      9060
1209 AAAAAAAAAA AAAAAAAAAA
1210

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9080

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1662 (2) INFORMATION FOR SEQ ID NO:46:
1663 (i) SEQUENCE CHARACTERISTICS:
--> 1664 (A) LENGTH: 4832 base pairs
1665 (B) TYPE: nucleic acid
1666 (C) STRANDEDNESS: single
1667 (D) TOPOLOGY: linear
1668 (ii) MOLECULE TYPE: DNA (genomic)
1669 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:
1670 CTCGAGCTAA AGATATTTTA GAGAAGAATT AACCTTTTGC TTCTCCAGTT
--> 1671 GAACATTTGT      60
1672 AGCAATAAGT CATGCAAATA GAGCTCTCCA CCTGCTTCTT TCTGTGCCTT
--> 1673 TTGCGATTCT      120
1674 GCTTTAGTGC CACCAGAAGA TACTACCTGG GTGCAGTGGG ACTGTCATGG
--> 1675 GACTATATGC      180
1676 AAAGTGATCT CGGTGAGCTG CCTGTGGACG CAAGATTTC TCCTAGAGTG
--> 1677 CCAAAATCTT      240
1678 TTCCATTCAA CACCTCAGTC GTGTACAAAA AGACTCTGTT TGTAGAATTC

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last sequence in file
name

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/001,039DATE: 02/10/98
TIME: 11:37:25

INPUT SET: S23358.raw

--> 1679 **ACGGATCACC** 300
1680 TTTTCAACAT CGCTAAGCCA AGGCCACCCT GGATGGGTCT GCTAGGTCCT
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1682 CTGAGGTTTA TGATACAGTG GTCATTACAC TTAAGAACAT GGCTTCCCAT
--> 1683 **CCTGTCAGTC** 420
1684 TTCATGCTGT TGGTGTATCC TACTGGAAAG CTTCTGAGGG AGCTGAATAT
--> 1685 **GATGATCAGA** 480
1686 CCAGTCAAAG GGAGAAAGAA GATGATAAAG TCTTCCCTGG TGGAAGCCAT
--> 1687 **ACATATGTCT** 540
1688 GGCAGGTCCCT GAAAGAGAAT GGTCCAATGG CCTCTGACCC ACTGTGCCTT
--> 1689 **ACCTACTCAT** 600
1690 ATCTTTCTCA TGTGGACCTG GTAAAAGACT TGAATTCAGG CCTCATTGGA
--> 1691 **GCCCTACTAG** 660
1692 TATGTAGAGA AGGGAGTCTG GCCAAGGAAA AGACACAGAC CTTGCACAAA
--> 1693 **TTTATACTAC** 720
1694 TTTTGTCTGT ATTTGATGAA GGGAAAAGTT GGCACTCAGA AACAAAGAAC
--> 1695 **TCCTTGATGC** 780
1696 AGGATAGGGA TGCTGCATCT GCTCGGGCCT GGCCTAAAAT GCACACAGTC
--> 1697 **AATGGTTATG** 840
1698 TAAACAGGTC TCTGCCAGGT CTGATTGGAT GCCACAGGAA ATCAGTCTAT
--> 1699 **TGGCATGTGA** 900
1700 TTGGAATGGG CACCACCTCT GAAGTGCACT CAATATTCCT CGAAGGTCAC
--> 1701 **ACATTTCTTG** 960
1702 TGAGGAACCA TCGCCAGGCG TCCTTGAAAA TCTCGCCAAT AACTTTCTCT
--> 1703 **ACTGCTCAAA** 1020
1704 CACTCTTGAT GGACCTTGGA CAGTTTCTAC TGTTTTGTCA TATCTCTTCC
--> 1705 **CACCAACATG** 1080
1706 ATGGCATGGA AGCTTATGTC AAAGTAGACA GCTGTCCAGA GGAACCCCAA
--> 1707 **CTACGAATGA** 1140
1708 AAAATAATGA AGAAGCGGAA GACTATGATG ATGATCTTAC TGATTCTGAA
--> 1709 **ATGGATGTGG** 1200
1710 TCAGGTTTGA TGATGACAAC TCTCCTTCCT TTATCCAAAT TCGCTCAGTT
--> 1711 **GCCAAGAAGC** 1260
1712 ATCCTAAAAC TTGGGTACAT TACATTGCTG CTGAAGAGGA GGAAGGGAC
--> 1713 **TATGCTCCCT** 1320
1714 TAGTCCTCGC CCCCAGTGAC AGAAGTTATA AAAGTCAATA TTTGAACAAT
--> 1715 **GGCCCTCAGC** 1380
1716 GGATTGGTAG GAAGTACAAA AAAGTCCGAT TTATGGCATA CACAGATGAA
--> 1717 **ACCTTTAAGA** 1440
1718 CTCGTGAAGC TATTCAGCAT GAATCAGGAA TCTTGGGACC TTTACTTTAT
--> 1719 **GGGGAAGTTG** 1500
1720 GAGACACACT GTTGATTATA TTTAAGAATC AAGCAAGCAG ACCATATAAC
--> 1721 **ATCTACCCTC** 1560
1722 ACGGAATCAC TGATGTCCGT CCTTTGTATT CAAGGAGATT ACCAAAAGGT
--> 1723 **GTAAAACATT** 1620
1724 TGAAGGATTT TCCAATTCTG CCAGGAGAAA TATTCAAATA TAAATGGACA
--> 1725 **GTGACTGTAG** 1680
1726 AAGATGGGCC AACTAAATCA GATCCTCGGT GCCTGACCCG CTATTACTCT
--> 1727 **AGTTTCGTTA** 1740
1728 ATATGGAGAG AGATCTAGCT TCAGGACTCA TTGGCCCTCT CCTCATCTGC
--> 1729 **TACAAAGAAT** 1800
1730 CTGTAGATCA AAGAGGAAAC CAGATAATGT CAGACAAGAG GAATGTCATC
--> 1731 **CTGTTTTCTG** 1860

Done

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/001,039DATE: 02/10/98
TIME: 11:37:28

INPUT SET: S23358.raw

1732 TATTTGATGA GAACCGAAGC TGGTACCTCA CAGAGAATAT ACAACGCTTT
--> 1733 CTCCCCAATC 1920
1734 CAGCTGGAGT GCAGCTTGAG GATCCAGAGT TCCAAGCCTC CAACATCATG
--> 1735 CACAGCATCA 1980
1736 ATGGCTATGT TTTTGATAGT TTGCAGTTGT CAGTTTGTTT GCATGAGGTG
--> 1737 GCATACTGGT 2040
1738 ACATTCTAAG CATTGGAGCA CAGACTGACT TCCTTTCTGT CTTCTTCTCT
--> 1739 GGATATACCT 2100
1740 TCAAACACAA AATGGTCTAT GAAGACACAC TCACCCTATT CCCATTCTCA
--> 1741 GGAGAAACTG 2160
1742 TCTTCATGTC GATGGAAAAC CCA

Application No.: 09/001039

**NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING
NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- ☐ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to these regulations, published at 1114 OG 29, May 15, 1990 and at 55 FR 18230, May 1, 1990.
- ☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- ☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- ☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
- ☒ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- ☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- ☐ 7. Other: _____

Applicant Must Provide:

- ☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- ☐ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- ☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216
For CRF Submission Help, call (703) 308-4212
For PatentIn software help, call (703) 308-6856

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